

MATERIAL SAFETY DATA SHEET

Date: June 19, 2018

Revision : I

1. Identification of the substance or mixture and of the supplier

1.1 Product identifier

Reference No.

Product name

Pyroxasulfone 85% WG

Synonyms

Pyroxasulfone; Pyroxasulfone 85 WG; SAKURA®; Zidua®

1.2 Recommended use of the chemical and restrictions on use

Research purposes only

1.3 Supplier's details

Name and Address

PI Industries Limited

237, GIDC Panoli, District Bharuch, Gujarat (India)

Telephone

+91-2646-655471-74

1.4 Emergency telephone (not available outside office hours)

Telephone

+91-2646-655471-74

2. Hazard identification

Classification of the mixture

2.1 Physical hazards

Not relevant

2.2 Health hazards

Acute toxicity

Oral Dermal

Not classified

Inhalation (gas)

Not classified

(vapour)

Not applicable

Classification not possible

(mist/dust)

Not classified

Skin corrosion/irritation

Not classified

Serious eye damage/eye irritation

Not classified

Respiratory sensitization

Classification not possible

Skin sensitization

Category 1

Germ cell mutagenicity

Not classified

Carcinogenicity

Category 1A

Reproductive toxicity

Not classified

Specific target organ toxicity

Not classified

(single exposure)

Specific target organ toxicity

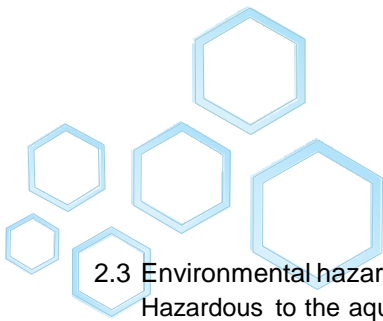
Category 1 (liver, kidney, urinary bladder, cardiovascular

(Repeated exposure)

system)

Aspiration hazard

Classification not possible



2.3 Environmental hazard

Hazardous to the aquatic environment
 Acute aquatic toxicity Category 1
 Chronic aquatic toxicity Category 1

2.4 Label elements

Pictograms or hazard symbols



Signal words

Danger

Hazard statements

May cause an allergic skin reaction	(code)	H317
May cause cancer		H350
Causes damage to organs (respiratory system, kidney, liver, urinary bladder, cardiovascular system) through prolonged or repeated exposure.		H372
Very toxic to aquatic life.		H400
Very toxic to aquatic life with long lasting effects.		H410

Precautionary statements

Safety precautions

Obtain special instructions before use.	P201
Do not handle until all safety precautions have been read and understood.	P202
Do not breathe dust/fume/gas/mist/vapours/spray.	P260
Wash hands thoroughly after handling	P264
Do not eat, drink or smoke when using this product.	P270
Contaminated work clothing should not be allowed out of the workplace.	P272
Avoid release to the environment if this is not the intended use.	P273
Wear protective gloves/protective clothing/eye protection/face protection.	P280

First-aid measures

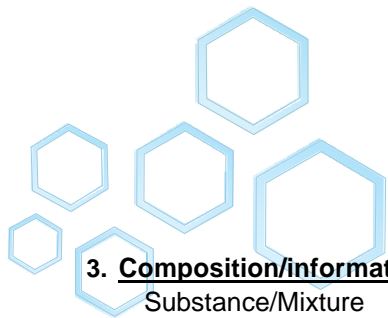
IF ON SKIN: Wash with plenty of soap and water.	P302+P352
Get medical advice/attention if you feel unwell.	P314
If skin irritation or rash occurs: Get medical advice /attention.	P333+P313
Specific treatment (see first aid instructions in Section 4 on this SDS)	P321
Take off contaminated clothing and wash it before reuse.	P362+P364
Collect spillage.	P391

Storage conditions

Store locked up.	P405
------------------	------

Disposal methods

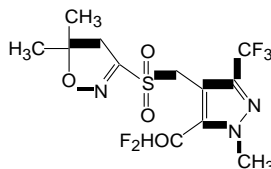
Dispose of contents/container in accordance with local regulation.	P501
--	------



3. Composition/information on ingredients

Substance/Mixture	Mixture		
Composition	Ingredients	CAS number	Concentration
	Pyroxasulfone	447399-55-5	85%
	Crystalline silica	14808-60-7	< 0.15%
	Other Ingredients	Non Hazardous	To Balance

Active ingredient	Pyroxasulfone
Chemical name (IUPAC)	3-[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)pyrazol-4-ylmethylsulfonyl]-4,5-dihydro-5,5-dimethyl-1,2-oxazole
Common name (ISO)	Pyroxasulfone
Synonyms	Sakura®, Zidua®, KIH-485
Molecular formula	C ₁₂ H ₁₄ F ₅ N ₃ O ₄ S



4. First aid measures

4.1 Description of necessary first-aid measures

Inhalation	Move person to fresh air and keep at rest. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control centre or doctor for further treatment advice.
Skin contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
Eye contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes and then continue rinsing. Call a poison control centre or doctor for treatment advice.
Ingestion	Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control centre or doctor. Do not give anything to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed

Not available

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Not available

5. Fire-fighting measures

5.1 Suitable extinguishing media

Suitable extinguishing media	Carbon dioxide (CO ₂), extinguishing powder A/B/C, foam, atomized water, or sand.
Unsuitable extinguishing media	Rod-like water



5.2 Special hazards arising from the chemical

CO, CO₂, SO, SO₂, nitrogen oxides, sulphur oxides, hydrogen fluoride and hydrogen cyanide may be released in a fire.

5.3 Special protective actions for firefighters

Wear self-contained breathing apparatus and full protective equipment. If possible and without risk, remove intact containers from exposure to fire. Contain firefighting water by bunding area with sand or earth to prevent it entering any bodies of water. Dispose of fire control water or other extinguishing agent and spillage safely later.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate protective gears to avoid breathing vapour and contact with skin, eyes or clothing when working on a spill (see Section 8).
Ventilate the closed area.

6.2 Environmental precautions

Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Collect by sweeping or suction into hermetically sealed containers and dispose of according to local Regulations.
Prevent spills from entering sewers, watercourses or low areas.
Remove all sources of ignition; flares, smoking or flames in the area immediately.

7. Handling and storage

7.1 Precautions for safe handling

Keep out of reach of children. Avoid ingestion. Avoid contact with skin, eyes or clothing.
Avoid inhalation of dust. When preparing the spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist, elbow-length gloves and goggles.
Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing/PPE before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Store in the closed, original container in a cool, well-ventilated area.
Do not store for prolonged periods in direct sunlight.
Keep away from heat, steam pipe or combustible materials. Keep away from food, drink and animal feeding stuffs.

8. Exposure controls / personal protection

8.1 Control parameters

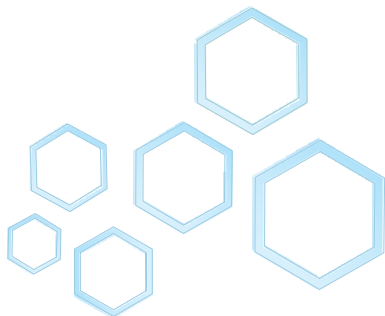
Not established

8.2 Occupational exposure limit values or biological limit values

Not established

8.3 Appropriate engineering controls

Avoid creation of dust. Control process conditions to avoid contact.
Use in a well ventilated area only. Refer to the product label
Make available emergency shower and eye washes in a work area and storage area.
Make available local exhaust ventilation and use sealed equipment to avoid exposure.

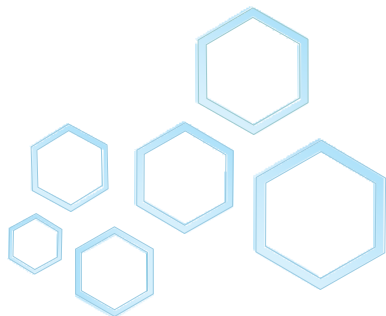


8.4 Individual protection measures, such as personal protective equipment

Eye protection	Skin	Wear safety goggles as appropriate.
Respiratory protection		Wear gloves, protective garment (coverall) and boots as appropriate.
		Wear chemical cartridge respirator with an organic vapour cartridge, airline respirator, positive pressure self-contained breathing apparatus as appropriate.

9. Physical and chemical properties

Appearance (physical state, colour etc.)	Light brown, granule
Odour	Characteristic odor
Odour threshold	Not relevant
pH	~9.5 (1% dilution in water)
Melting point/freezing point	Not available (130.7°C -- pyroxasulfone)
Initial boiling point/boiling range	Not available
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	Not available (2.4 x 10 ⁻⁶ Pa (25 °C) -- pyroxasulfone)
Vapour density	Not available
Relative density	Not available (1.60g/cm ³ --pyroxasulfone)
Bulk density	1.58 g/cm ³
Solubilities	(Disperses in water)
water	Not available (3.48mg/L at 20°C --pyroxasulfone)
acetone	Not available
methanol	Not available
n-hexane	Not available (11.4g/L at 20°C --pyroxasulfone)
toluene	Not available
dichloroethane	Not available
ethylacetate	Not available (11.3g/L at 20°C --pyroxasulfone)
Partition coefficient:	Not available (151g/L at 20°C --pyroxasulfone)
n-octanol/water	Not available (97.0mg/L at 20°C --pyroxasulfone)
Auto-ignition temperature	Not available (log Pow 2.39 at 25°C -- pyroxasulfone)
Decomposition temperature	Not available
Viscosity	Not available



10. Stability and reactivity

10.1 Reactivity

Not available

10.2 Chemical stability

Stable under normal conditions of storage and use

10.3 Possibility of hazardous reactions

Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

10.4 Conditions to avoid

Avoid sources extremes of temperature and direct sunlight

10.5 Incompatible materials

None known

10.6 Hazardous decomposition products

Carbon dioxide, carbon monoxide, nitrogen oxides, sulphur oxides, hydrogen fluoride and hydrogen cyanide may be released in a fire.

11. Toxicological information

Acute toxicity

Oral	(rat)	LD ₅₀ > 2,000 mg/kg	Not classified
Dermal	(rat)	LD ₅₀ > 2,000 mg/kg	Not classified
Inhalation	(mist/dust)	LC ₅₀ > 5.8 mg/L	Not classified

Chronic Toxicity [Information on Pyroxasulfone]

A chronic toxicity study in dogs produced effects on nerve tissues, skeletal muscles, and clinical chemistry enzymes related to muscle tissues.

Skin corrosion/irritation

Mild irritant

Not classified

Serious eye damage/irritation

Moderately irritating

Not classified

Respiratory or skin sensitisation

Respiratory sensitisation: Data lacking

Skin sensitisation: Sensitizer

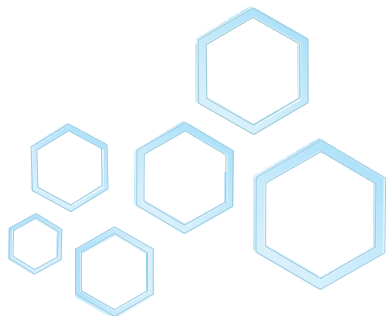
Respiratory: Classification not possible

Skin: Category 1

Germ cell mutagenicity

Not classified because the product does not contain any ingredients classified as Category 1 nor 2 mutagen.

Not classified



Carcinogenicity	Category 1A Classified as Category 1A because the product contains an ingredient classified as Category 1A carcinogen (crystalline silica) at more than 0.1% .
Reproductive toxicity	Not classified Not classified because the product does not contain any ingredients classified as Category 1 nor 2 reproductive toxicant at more than 0.1%.
STOT-single exposure	Not classified Not classified because the product does not contain any ingredients classified as Category 1 nor 2 specific target organ toxicant (single exposure) at more than 1.0%.
STOT-repeated exposure	Category 1 (liver, kidney, urinary bladder, cardiovascular system) Classified as Category 1 because the product contains an ingredient classified as Category 1 specific target organ toxicant (repeated exposure) (pyroxasulfone) more than 10%.
Aspiration hazard No Data	Classification not possible

12. Ecological information

Acute aquatic toxicity	Category 1 Classified as Category 1 because ErC ₅₀ (96h) to algae was 0.00263 mg/L.
Chronic aquatic toxicity	Category 1 Classified as Category 1 because the product is classified as Category 1 in acute aquatic toxicity and is thought of as lack of rapid degradability (BIOWIN).

12.1 Toxicity Fish

(carp) <i>Daphnia magna</i>	LC ₅₀ (96 h) > 1,000mg/L
Algae	EC ₅₀ (48 h) > 1,000mg/L
Honeybee	ErC ₅₀ (96 h) 0.00263mg/L
Earthworm	Not available (LD ₅₀ (48 h) > 100 µg/bee-- pyroxasulfone)
Bird (bobwhite quail)	Not available (LC ₅₀ (14d) > 997mg/kg -- pyroxasulfone) Not available (LD ₅₀ > 2,250 mg/kg -- pyroxasulfone)

12.2 Persistence and degradability

DT ₅₀ soil	16-28 days as pyroxasulfone
Biodegradability	Not available

12.3 Bioaccumulative potential

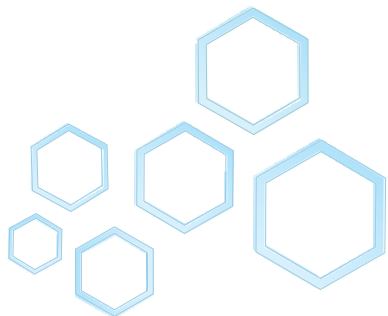
Not available	(log Pow 2.39-- pyroxasulfone)
---------------	--------------------------------

12.4 Mobility in Soil

Not available (Absorption/desorption Koc 1838 - 33617 --- pyroxasulfone)

12.5 Other Adverse Effects

Not Available



13. **Disposal considerations**

Do not contaminate water, food, or feed by storage or disposal of this product. Empty bag may be disposed of in a sanitary landfill or by incineration, or, if allowed by state and authorities, by burning. If burned, stay out of smoke.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a local regulation. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority.

14. **Transport information**

14.1 UN number
3077

14.2 UN proper shipping name
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Pyroxasulfone)

14.3 Transport hazard class(es)
9



14.4 Packing group
III

14.5 Environmental hazards
Marine pollutant (P)

14.6 Special precautions for user
Do not transport the product with food and/or feed.
For the transportation, avoid elevated temperature and direct sunlight. Load the product without crushing, corroding of container and/or leaking from container. Prevent collapse of cargo.
Do not load heavy goods on the top.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

15. **Regulatory information**

Not available

16. **Other information**

To the best of our knowledge, the information contained herein is accurate.
However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.